

**INTERMITTENT FEEDING TECHNIQUE FOR
INCREASING THE MELTING RATE OF POLYCRYSTALLINE SILICON**

ABSTRACT

A process for preparing a silicon melt in a crucible for use in growing a single crystal silicon ingot by the Czochralski method. The crucible is first loaded with chunk polycrystalline silicon and heated to partially melt the load. Granular polycrystalline silicon is then fed onto the exposed unmelted chunk polycrystalline silicon to complete the charge of silicon in the crucible. The granular polycrystalline silicon is intermittently delivered using a plurality of alternating on-periods and off-periods. During each on-period, granular polycrystalline silicon is flowed through a feed device that directs the granular polycrystalline silicon onto the unmelted chunk polycrystalline silicon. During each off-period, the flow of the granular polycrystalline silicon is interrupted. The loaded chunk polycrystalline silicon and the fed granular polycrystalline silicon are melted to form the silicon melt.